

# CHILDREN'S PICNIC BENCH

DIFFICULTY: **MEDIUM**



5 VOLUNTEERS



4 HOURS

## MATERIALS

### PREP

(7) 2x4x8ft boards

(1) 2x6x8ft boards

### BUILD

(2) 2x6x48" pieces

(7) 2x4x48" pieces

(2) 2x4x40.5" trapezoids

(4) 2x4x25 5/8" parallelograms

(2) 2x4x21.5" trapezoids

(1) 2x4x19.5" piece

(2) 2x4x17.75" polygons

(12) 3/8"x3.5" galvanized carriage bolts

(12) 3/8" galvanized washers

(12) 3/8" galvanized nuts

1lb 2.5" deck screws

*Tools listed on page 2*

## PREP LIST

1. Sort materials into piles by like items to ensure you have materials needed to complete project.
2. Take 2x6x8ft board. Cut (2) 48" pieces from it.
3. Take 3 of the 2x4x8ft boards. Cut (2) 48" pieces from each, for a total of (6) 2x4x48" pieces.
4. Take 1 of the remaining 2x4x8ft boards. Cut (2) 40.25" pieces from it.
5. Take 1 of the remaining 2x4x8ft boards. Cut (1) 25 5/8" piece, (2) 21.5" pieces, and (1) 19.5" piece from it.
6. Take 1 of the remaining 2x4x8ft boards. Cut (3) 25 5/8" pieces from it.
7. Take the remaining (1) 2x4x8ft board. Cut (1) 48" piece and (2) 17.75" pieces from it.
8. Angled Cuts: Take (2) 2x4x40.25" pieces cut in Step 4. Measure down 1" from top corner and 2" from bottom corner. Join the two spots with a line and cut 38° angle on line. Repeat on other side to create a 2x4x40.25" trapezoid. Repeat on other 2x4x40.25" piece. Take (2) 2x4x21.5" pieces cut in Step 5. Measure down 1" from top corner and 2" from bottom corner. Join the two spots with a line and cut 38° angle on line. Repeat on other side to create a 2x4x21.5" trapezoid. Repeat on other 2x4x21.5" piece. Take (4) 2x4x25 5/8" pieces cut in Steps 5 and 6. Measure and cut a 30° angle from each side to create (4) 2x4x25 5/8" parallelograms. Take the (2) 2x4x17 3/4" pieces cut in Step 7. Measure 2.75" in from top left corner and draw a line from there to bottom left corner. Set miter saw to 38° and cut along this line. Measure/make two marks: 1" from right bottom corner; and 1 1/8" up from bottom right corner. Connect these lines to create guide and cut along line, with miter saw set to 38°. Measure 3" to left from top right corner, draw a line connecting it to the point on the right-hand side that you just cut (approx. 3/8" down). Set your saw to 52 degrees and cut along this line. Repeat on the other 2x4x17.75" piece to create (2) 2x4x17.75" polygons.

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## TOOLS

### PREP

Miter saw

Pencil

Tape measure

Carpenter's square

Safety glasses

### BUILD

3/8" drill bit

Drill

Hammer

Screwdriver bit

Level

9/16" socket/ratchet or 9/16" open-ended wrench

Measuring tape

Pencil

Safety glasses

Sandpaper

## BUILD LIST

1. Sort materials into piles by like items to ensure you have materials needed to complete project.
2. Locate pieces for A frame: 2 legs (2x4x25 5/8" parallelograms), 1 table support (2x4x21.5" trapezoid) , 1 seat support (2x4x 40.25" trapezoid).
3. On legs, measure 4" down from angled edge of parallelogram and mark a straight line as shown by the top red dot in STEP 7 (do this for all legs).
4. From the 4" line, measure down 5.75" and mark with a straight line once again (do this for all legs).
5. For the table supports, make mark on bottom side of the trapezoid, 3" from the ends (do this for all table supports).
6. On seat supports, make mark 9.5" from ends on the upper side of the trapezoid, and 7.5" on the bottom side. Join the 2 marks with a line.
7. Assemble A frame by aligning table support and seat supports along lines drawn on legs. The leg tops should flush with top of the table support.
8. Attach each intersection with 2 screws and then drill pilot holes for each of the carriage bolts as shown by the black dots in the diagram.
9. Attach carriage bolts. The head of the carriage bolt should enter through the side of the seat and table supports and then through a washer and nut on the inside. Be sure to stagger the bolts as show by the black dots.
10. Stand up the 2 'A' frame sides, making sure the carriage bolt heads are towards the outside and the nuts are towards the inside.
11. Locate the pieces for the table tops and seats - the [2] 2X6X48" pieces and the [7] 2X4X48" pieces.

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## BUILD LIST

12. Take both of the 2x6x48" pieces and 2 of the 2x4x48" pieces. For each of the pieces, measure 9" down from the upper right end and mark with a straight line (see diagram).



13. Using the marked table top pieces (2x6x48) and outer seat pieces (2x4x48), connect the two frames as shown in the bottom left diagram. Screw the seat and table top boards to each leg frame. \*NOTE\* Be sure the seat and table tops extend .25" past the edges of the A frames as shown in the bottom diagram! \*\* Attach the seat and table top board with the grain oriented as shown in Detail 1. Lumber tends to warp AWAY from the center of the tree: this orientation will ensure the wood cups down if it warps.



14. Locate the center support (2x4x19.5"). Place the support to the center of the table halfway between the A frames. Attach the support by screwing down through the table top boards.



15. Locate the diagonal braces (2x4x17.75"). Install the braces from the center support down to the legs. \*NOTE\* The braces will need to be offset at the top in order to screw the center table top support into both braces. Be sure to plumb the 'A' frames as you install the braces so that everything fits tight and flush. Install the braces with 2 screws at both ends.



16. Attach the rest of the table tops and seats leaving a .25 in gap between each board, or an even distance. Be sure to pre drill to avoid splitting the wood.

